The Afghanistan Engineering Support Program assembled this deliverable. It is an approved, official USAID document. Budget information contained herein is for illustrative purposes. All policy, personal, financial, and procurement sensitive information has been removed. Additional information on the report can be obtained from Firouz Rooyani, Tetra Tech Sr. VP International Operations, (703) 387-2151.

TETRA TECH

MEMO

To:	[redacted]
Cc:	[redacted]
From:	[redacted]
Date:	April 7, 2016
Subject:	WO-LT-0082 Engineering Support for Vertical Structures Amendment 1 (AMD1) American University of Afghanistan (AUAF) Women's Dormitory Review of the 100% Partial Site Construction Documents Submittal

This memorandum is presented in response to USAID's request to Tetra Tech (Tt) to review and comment on the WO-LT-0082 AMD1, AUAF Women's Dormitory 100% Partial Site Construction Documents submittal received by Tt on March 31, 2016 (see Appendix A- Submittal Log). The submittal package contained a 114-page Design Analysis, a 44-page Specification section, and a 30-sheet plan set.

As a result of this review, Tt has found that the 100% Partial Site Construction Documents submittal, including the site drawings for site civil, utility, electrical, and communications, do not meet the requirements for a 100% submittal. Tt therefore recommends that the Contractor resolve all of the remaining comments contained in this submittal review prior to resubmitting the 100% Partial Site Construction Documents package or release of the package for construction.

Additionally, the Contractor needs to address Tt's comments from the 35% Schematic Design Review stage which have not been addressed entirely in the 100% Partial Site Construction Documents stage. These comments have been identified in the attached design review comment sheet.

In the interest of time, Tt suggests that USAID hold a coordination meeting between USAID, Tt and the Contractor, to review our comments expeditiously. The Contractor could use this meeting to any questions about the 100% Partial Site Construction Documents Submittal review.

The submitted package included:

- Overall Existing Condition Plan.
- Site Layout Plan
- Site Grading and Drainage Plan.
- Site Sections.
- Walkway and Side Walk Dimension Plan.
- Civil Site Details.
- Ditch Plans and Profiles
- Site Utility Plan.
- Site Water and Sanitary Plan and Profile.
- Site Utility Details.
- Electrical Site Plan.
- Exterior Lighting Plan.
- Electrical Single Line Diagram.

- Communication Site Plan.
- Site Electrical and Communication Details.
- Relevant Design Analysis Sections.
- Relevant Specification Sections.

Tt understands that the final deliverable following Tt's review of the 100% Construction Documents submittal includes an Interim Design Review Report, Design Review Comment Sheet and Submittal Log. Tt will develop the aforementioned documents after reviewing the 100% Construction Documents package for the entire building and will incorporate our review of the 100% Partial Site Construction Documents submittal into these documents.

Civil

A review has been conducted of the civil aspects of the 100% Partial Site Construction Documents including Drawings, Design Analysis and Specifications, with reference to the latest codes and standards as mentioned in the AUAF Women's Dormitory building program. Based on Tt's review of the 100% Partial Site Construction Documents submittal package and review of PEREZ provided responses to the Tt prior review comments, the civil discipline reviewers found that the site/civil drawings, design analysis and specifications are still not adequate for the 100% Construction Documents design level.

As indicated by the comments in the attached review, the site/civil component of the dormitory design has inconsistencies that need to be corrected prior to release for construction. Refer to Appendix B for a comprehensive set of civil review comments. All of the review comments for this 100% Construction Documents submittal should be addressed prior to resubmitting the 100% Partial Site Construction Documents.

Electrical and Communications

The electrical discipline reviewers found that the electrical and communication aspects of the site drawings, design analysis and specifications, while generally approaching the expectations for the 100% Construction Documents stage, still have several inconsistencies in the details. Refer to Appendix B for a comprehensive set of electrical and communication review comments. All of the review comments for this 100% Construction Documents submittal should be addressed prior to resubmitting the 100% Partial Site Construction Documents.

Plumbing

The plumbing discipline reviewers found that while the plumbing aspects of the site drawings, design analysis and specifications are generally acceptable for this level of project development, there still are several contradictions in the details. Refer to Appendix B for a comprehensive set of plumbing review comments. All of the review comments for this 100% Construction Documents submittal should be addressed prior to resubmitting the 100% Partial Site Construction Documents.

Structural

The structural discipline reviewers found that the structural aspects of the site drawings, design analysis and specifications, are generally acceptable for the 100% Construction Documents stage. The one outstanding item is the seismic design of the water well vault. If the water supply to the dormitory is considered critical following a seismic event, then the structure must be designed to survive seismic loading. Refer to Appendix B for structural review comments. All of the review comments for this 100% Construction Documents submittal should be addressed prior to resubmitting the 100% Partial Site Construction Documents.

Summary

The 100% Partial Site Construction Documents Submittal does not adequately address the level of completion expected for the 100% Construction Documents stage for the included site components, and Tt recommends that the Contractor resubmit the 100% Partial Site Construction Documents Submittal for these components of the project pending resolution of all of Tt's remaining review comments. Appendix B, attached to this

memorandum, includes Tt's review comments for the 100% Partial Site Construction Documents Submittal and Tt's back check of the Contractor responses to our previous review comments.

Submittal Description				Tetra Tech (Tt) / USAID				
Registration No.	**TT Tracking Number**	**Document Name/ Description**	**Type of Document**	**Received from USAID**	**Due Date for Review**	**Reviewed by Tt**	**Returned to USAID**	**Status for Action**
1	2	3	4	12	13	14	16	19
0001	WO-LT-0082-PEREZ-DES35%-0001	35% Design Submission	DES35%	October 15, 2015	October 30, 2015	Kabul/Reachback	October 26, 2015	Returned for Correction
0001A	WO-LT-0082-PEREZ-DES35%-0001A	35% Design Resubmission	DES35%	November 18, 2015	December 3, 2015	Kabul/Reachback	December 3, 2015	Reviewed as Amended
0002	WO-LT-0082-PEREZ-GTIReport-0002	35% Design GTI Report	GTI Report	November 4, 2015	November 19, 2015	Kabul/Reachback	November 15, 2015	Reviewed as Amended
0002A	WO-LT-0082-PEREZ-GTIReport-0002A	35% Design GTI Report USAID Comments	USAID Comments	November 18, 2015	December 3, 2015	Kabul/Reachback	December 3, 2015	Reviewed as Amended
H- 0002	WO-LT-0082-PEREZ-DES65%-0003	65% Design Submission	DES65%	January 6, 2016	January 21, 2016	Kabul/Reachback	January 21, 2016	Returned for Correction
115	WO-LT-0082-PEREZ-Civil65%-0004	65% Civil Design Resubmission	CivilDes65%	February 15, 2016	March 1, 2016	Reachback	February 17, 2016	Returned for Correction
115	WO-LT-0082-PEREZ-Civil65%-0004A	65% Civil Design Resubmission	CivilDes65%	February 18, 2016	March 4, 2016	Kabul/Reachback	March 2, 2016	Reviewed as Amended
112.1	WO-LT-0082-PEREZ-ReDES65%-0005	65% Design Resubmission	ReDES65%	February 25, 2016	March 12, 2016	Kabul/Reachback	March 12, 2016	Reviewed as Amended
114.1	WO-LT-0082-PEREZ-ReDES65%-0006	Construction Schedule	ReConSchedule	February 28, 2016	March 14, 2016	Kabul	March 14, 2016	Returned for Correction
0002B	WO-LT-0082-PEREZ-GTIReport-0002B	RevisedGTIReport	RevisedGTIReport	March 3, 2016	March 18, 2016	Kabul/Reachback	March 17, 2016	Reviewed
137	WO-LT-0082-PEREZ-DES99%-0007	99%Civil Partial Package	CivilDes99%	March 17, 2016	March 26, 2016	Kabul/Reachback	March 26, 2016	Reviewed as Amended
137	WO-LT-0082-PEREZ-DES100%-0008	100%Civil Partial Package	CivilDes100%	March 31, 2016	April 7, 2016	Kabul/Reachback	April 7, 2016	Returned for Correction

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0002B	WO-LT-0082-PEREZ-GTIReport-0002B	RevisedGTIReport	RevisedGTIReport	March 3, 2016	March 18, 2016	Kabul/Reachback	March 17, 2016	Reviewed
								Reviewed
								Reviewed as Amended
								Returned for Correction

Design Review Comment Sheet
WO-LT-0082 AMD 1 AUAF Women's Dormitory
100% Civil Partial Design
07-April-2016

Response Legend
A - Agree
D - Disagree
O - out of scope
AE - Agree with exception

Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check	Perez Response	Tt Back-Check comments	Perez Response	Back-Check
		Page	Detail								
GENERAL COMMENTS											
65% Review Comments											
14	RKO	Spec Div. 1	01 33 00	Designer shall add these items are inclusive into submittals required - MOBILIZATION PLAN, AREA USE PLAN and CONSTRUCTION STAFFING ORG CHART.	D	The Following Items are already submitted under separate ENG Form (Transmittal)MOBILIZATION PLAN AND AREA USE PLANS ARE ALREADY SUBMITTED TO USAID AND APPROVED, WHERE STAFFING ORG CHART IS INCLUDED IN THE QC PLAN.	Open Tt could not find the mentioned items in the 65% civil package resubmittal.	It will be provided in 99% package.	Tt could not find the mentioned items in the 99% civil package resubmittal. This review comment remains **OPEN**.	Mentioned documents are already submitted and approved by USAID	Since these documents are stated by PEREZ as already approved by USAID, then PEREZ can provide to Tt these document as FIO (no review required). These documents are: MOBILIZATION PLAN, AREA USE PLAN & QC Plan. Until Tt receives confirmation from USAID that these construction documents are indeed approved by USAID and that Tt receives copies of these construction documents, Comment #14 remains **OPEN.**
26	RKO	Spec Div. 1	01 33 00, 1.18.1.e (6)	Designer shall add line items of all construction plans, i.e. HSE, and of all product submittal groups.	A	Per Reviewer instruction the UFGS is updated. This section is edited related to the project in latest version of UFGS	Open Need to be provided in 99% package.	It will be provided in 99% package.	Designer has not added line items of all construction plans, i.e. HSE, and of all product submittal groups, as mentioned in the review of the submittal register. This review comment remains **OPEN.**	Mentioned documents are already submitted and approved by USAID	Since PEREZ' HSE Plan as already been approved by USAID, then PEREZ can provide to Tt this document as FIO (no review required). Until Tt receives confirmation from USAID that this construction document has indeed been approved by USAID and that Tt receives copies of this construction document, Comment #26 remains **OPEN.** Additionally Comment #26 remains open because the submittal register is not confirmed as updated and complete, matching to the submittal requirements of the entire set of approved specifications and matching to the products to be used into the project. Repeat: Comment #26 remains **OPEN** for these two reasons.
99% General Review Comments											
1	RJM	Plan Cover		The cover sheet should reference the 100% Partial Site Construction Documents Submittal, not Design Development Documents.	A	Applied accordingly	Closed				
2	RJM	Design Analysis	Cover	The covers of the design analysis do not reference the design stage of the submittal package.	A	The cover sheet is revised, to reflect the submittal stage	Closed				
3	RJM	Project Specification	Cover	The cover of the project specification does not reference the project name, design stage, or the submittal date of the submittal package.	A	The cover sheet is revised, to reflect the submittal stage	Closed				
4	NA	General		The submittal is titled as 100% design, while it should be 99% design submittal, as it is in 99% stage.	A	Agree					
5	NA	General	Drawings Title Block	Drawings frame in its revision part to be updated to reflect each submittal stage correctly.	A	Applied accordingly					
100% General Review Comments											
1	RJM	G-001	Drawing Index	Several of the plans are out of order in the pdf plan set..							
2	RJM	G-001	Legend	Many of the legend items do not accurately reflect the way that they are shown on the plans.							

Design Review Comment Sheet
WO-LT-0082 AMD 1 AUAF Women's Dormitory
100% Civil Partial Design
07-April-2016

Response Legend
A - Agree
D - Disagree
O - out of scope
AE - Agree with exception

Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check
		Page	Detail				
ARCHITECTURE COMMENTS							
No Comments related to civil site development in architecture							
100% Review Comments							

Response Legend
A - Agree
D - Disagree
O - out of scope
AE - Agree with exception

Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check
		Page	Detail										
CIVIL COMMENTS													
35% Review Comments													
46	JWH	C-08		The drainage calculations provide peak flow to the channel but do not provide the volume calculations necessary to size the dry wells.	A			The size of dry well is increased but For the volume calculation the lab is asked to conduct a percolation test. Therefore till the results come we will confirm the adequacy of the drywell size	To remain open until results confirming design are received.	Laboratory is appointed to conduct a percolation test on site. The test result will be shared with Tt once Perez receive from Lab.	Open	The percolation test report is attached to the surface drainage analysis as an Appendix	See new comment No. 9 in 100%
47	JWH	C-08		Provide soil test documenting that the soils are permeable and that runoff will be dissipated by the drywells.	A	This comment is responded in the geotechnical investigation report.	Geotechnical report shows clay, no infiltration information is shown in the report. Clay is not suitable for storm water infiltration.	The depth of the drywell is increased please see civil detail dwg.	To remain open until results confirming design are received.	Laboratory is appointed to conduct a percolation test on site. The test result will be shared with Tt once Perez receive from Lab.	Open	The percolation test report is attached to the surface drainage analysis as an Appendix	See new comment No. 9 in 100%
65% Review Comments													
1A	JWH	G002-		Create a new sheet entitled General Notes and Legend, this is a typical approach and includes all information only once and in one location.	A	It will be provided in the 65% resubmittal	Open until full package is received and reviewed.	General Notes and Legend will be provide in 100% construction documents.	Open: 100% submitted, but sheet not included.	Provided accordingly. Please refer to Sheet G-001.	Closed		
55	JWH	C-07		Provide detail for ADA Ramps	A	if it means details for ADA ramp, it will be provided in Arch drawings along with 65% submittal.	Open until full package is received and reviewed.		Open: Detail for handicap ramp not provided in Arch drawings.	The required details will be provided under architecture discipline drawings, not part of the partial design submittal package	Closed: Details must be provided with the building submittal.		
56	JWH	C-07		Provide detail for Stairs	A	If it means details for Stairs, it will be provided in the Arch drawings along with 65% submittal.	Open until full package is received and reviewed.	It will be connected to via switch to medium voltage busbar of transformer station number 1.	Open: Detail for exterior stairs not provided in Arch drawings. Response provided makes no sense.	The required details will be provided under architecture discipline drawings, not part of the partial design submittal package	Closed: Details must be provided with the building submittal.		
59	JWH	C-07/**CU-502**	Detail 9	Provide detail for Tie-in to holding tank	A	Please Clarify	Open, provide information about the location, materials and connection to tank. Also, it appears that the new line is running through the access chimney.	Connection of the sewer line to the existing holding tank is thru the Roof slab of th holding tank as shown on CU-502. This pipe has been extended to the ground for better venting of the tank. It is not access chimney	Open: Provide plan view to locate existing access and proposed tie-in. Provide detail to confirm that the proposed fittings will fit in the .15m clearance available between the invert and the top of tank.	Existing access to holding tank and location of sewer pipe connection to existing holding tank has been added and shown on sewer collection plan, CU-102. There is no exact drawing for existing holding tank to use for more detailing. Sewer pipe has been connected via two (2) 45 degree elbow fitting to the tank from the top as shown on CU-502. Elbows are per standard sizes.	Open: 150mm from invert to top of tank is not sufficient for back-to-back 200mm 45 elbows. Provide information regarding the size of the hole to be drilled in the tank and the method/materials to be used to seal the hole once the pipe is installed.		
84	JWH	CS -15/CS-E-101		The plan chows the line going to Electrical tower 1. What happens then, tell the contractor what to do. Who does this need to be coordinated with. Label tower on plan.	A	Please refer to the electrical drawings for this comment response. This sheet is omitted from civil package.	Open until electrical information is received and reviewed.		Open: The note on CS-E-101 is cut off by the viewport.	Corrected accordingly	Closed		
97	KF	C- 03		*- Where is common solid waste storage location, the location of dumpster pads, dumpster pad details, screen walls, in conformance with sanitation department standards. Please clarify.	A	There is a septic, according to the contract it has to be connected to existing holding tank. For more information please refer to the contract.	**OPEN** Provide trash collection points, to store the solid waste material.	1, there is an existing trash point shown on the drawings. 2, providing additional trash point is out of the scope of this contract	**Open,** The existing trash collection point may not be sufficient for the additional solid waste disposal of 200 Students, as it was constructed for the existing facilities. Per contract section E.7. Design and construction of the Women's Dormitory shall be in accordance with internationally recognized building and safety codes :(i.e. IBC, UFC...etc.).Provide Trash Dumpster as per UFC 3-201-01.	Provision of additional trash point is out of the scope of this contract. If Tt wants to include a trash collection point out side of the building, please contact the COR to issue modification in the contract, n order to include the extra budget of required design and build such facility.	Open		
106	NA	C-04		Change title on the title sheet and drawing title to read "Site Master Plan"	A	in general the civil drawings are modified to make sure they meet the actual site condition and consider your comments and suggestions.	**OPEN** The reviewer was unable to find the site plan over the design package, site plan is one of the essential requirement of the project.	the designer understand that sheet C-02 and CU-101 covers all information requires for the project.	**Open,** Contractor to provide site plan as required by the contract section C.5. Generally the site plan shall include and show the followings : Verified property line location, dimensions, direction from back of the sidewalk to property line, scale and north arrow direction. The size, shape, and location of all existing and proposed structures, and the distance to the nearest point of any dwelling on abutting properties. Front, side, and rear yard setback dimensions from property line to all existing and proposed structures.	Site Plan is provided accordingly please refer to sheet (C-01a).	Closed		
110	NA	A-Series		Show concrete sidewalk on the Architecture plan sheets	A	Please refer to Arch Plan for this comment response.	OPEN The concrete sidewalks on the Architecture plans were not exist; however, the sidewalks section without dimensions are exist in the architectural sections. The concrete sidewalk with dimensions should be shown in the plans as well.	in response to the comment the designer provided walk way and side walk plan (C-04) .	**Open,** Concrete sidewalk needs to be shown in the Architecture plans.	Sidewalk will be shown in the 99% submittal package under Architecture plans.	Closed		
124	NA	C-09		Provide joints layout for concrete sidewalk.	A	Provided accordingly, please refer to sheet C-04	OPEN Although the joint layout is provided ,but joint detail is still missing for the walkway and sidewalk.	The joint detail is provided .	**Open**, 1.Expansion joint detail; add callout on the dowel bar to read "Lubricated smooth dowel bar". 2.Show expansion joint where the concrete sidewalk abuts building and concrete walkway.	1. Applied accordingly. 2.Expansion joint provided for the mentioned area	Closed		
127	NA	CU-103		A roof top elevated water reservoir is required per contract section C-4.Contractor to provide design calculation for sizing and drawings detail showing location and piping connections.	A	Details will be provided in 65% resubmitted package	OPEN Not provided , to be opened until necessary information is provided.	Roof mounted elevated tank details will be provided in building submittal not partia site submittal.	**Open,** Water tank sizing and associated piping to be covered under civil work ,hence, these details should be included in the civil package.	As agreed in the coordination meeting with the COR, roof mounted elevated tank details will be provided in building submittal not partial site submittal.	Open		
139	NA	CU-501	Water Well Vault Plan	How will the roof top water reservoir get filled? a duplex booster pump system is required to shoot the water to the elevated water tank.(Ref. RFP Section C-4/5.)	A	Water reservoir will be filled with submersible pump directly and controlled automatically. There is no need for additional booster pumps.	OPEN Once the well is developed ,Provide pump size calculation to verify that the well pump is capable to shoot water from the well to the elevated water tank, considering head losses.	It will be done accordingly.	To remain open until the requested information is provided.	It will be done accordingly. Agree	Open		
152	NA	Design Analysis		Provide water well submersible pump design calculation.	A	Water well submersible pump design calculations will be provided after water well development.	OPEN To be opened until well is developed and report is provided.	It will be done accordingly.	**Open**	It will be done accordingly. Agree	Open		
65% Civil Design Resubmittal Comments													

Design Review Comment Sheet
WO-LT-0082 AMD 1 AUAF Women's Dormitory
100% Civil Partial Design
07-April-2016

Response Legend
A - Agree
D - Disagree
O - out of scope
AE - Agree with exception

Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check
		Page	Detail										
CIVIL COMMENTS													
6	NA	Plan sheets		Provide landscape plan as required by contract section C.4		the landscaping plan will be submitted as part of 100% construction documents	**Open**, to remain open until the landscape plan is provided.	The land l1scaping plan will be coordinated with the AUAF representative. Then it will be submitted under Architecture discipline drawings in 100% complete submittal Package, not in Partial submittal	Open				
10	NA	C-05	Detail-3	Provide min. 100mm thick Concrete under the drain PVC pipe.	A	Considered accordingly, Please refer to sheet C-05 details No.4	**Open,** indicate dimension of the concrete encasement all around the pipe, to show the required cover.	The detail is provided accordingly	Closed				
11	NA	CU-502	sewer MH cover	Provide detail of cast-iron cover.	A	detail of cast-iron cover has been provided on sheet CU-503, detail #6	**Open**, Provide cast iron cover detail showing cover dimension and thickness for both Sewer MH and Well Vault separately.	Standard size per PFM has been provided for both Sewer MH and Well Vault. Dimension adjusted. Please refer to sheet CU-503.	Closed				
12	NA	CU-502	Sewer MH	Provide Structure calculation for the MH and it's cast iron cover to verify H-20 rating .	D	MH and it's cast iron cover are completely according to Fairfax County Public Facilities Manual (PFM). No additional calculations are required.	**Open**, The cost iron frame and cover shown in the drawings do not match with the standard traffic rated cover as required by PFM :per referenced manual the cover thickness should be 79mm and the frame height should be 150mm.	The cost iron frame and cover revised to match with the standard traffic rated cover as required by PFM. Per referenced manual and detail #7 and #8 on drawing CU-503, the cover thickness is 79mm and the frame height is 150mm.	Closed				
15	NA	Design Analysis	Well vault structure calcs	Section 5.3, the structure is considered as traffic rated ,but the statement at end says that the traffic load not to be counted for this structure. The structure is adjacent to the existing road so it is required to be traffic rated.		please see the revised structure analysis provided for the vault	**Open**. The statement still says that the traffic load not to be considered for this structure. The correction is not applied to the analysis and calculation.	Corrected Accordingly.	Closed				
17	NA	Design Analysis	Drywell	Provide structure calculation for the Drywell.	A	This is common practice, well with concrete ring. Hence, there is no need for calculation	**Open**		Open				
18	NA	ED-01&02	Elec MH&HH	The electrical MH &HH and their covers need to be H-20 traffic rated , as they are along the existing road.	A	Agreed. H-20 requirement added to MH &HH and their covers. Refer to MH &HH and their covers. Refer to ED-01&02.	**Open,** Refer to comment No.12.	Applied Accordingly.	Closed				
99% Civil Design Comments													
1	RJM	C-04	Plan	Show downspout drains in the sidewalk. Correct spelling of the work Dimension in the title of the detail and sheet.	A	Accordingly applied.	Closed						
2	RJM	C-05	Det 2	Correct spelling of Concrete. Change "Bolder" to Washed Stone, boulders are defined as being larger than Ø256 mm.	A	Accordingly applied.	Closed						
3	RJM	C-05	Det 3	Provide details of catch basin construction.	A	Detail provided accordingly. Please refer to sheet (C-052).	Closed						
4	RJM	C-05	Det 3	Invert of pipe must be increased to provide cover and allow the pipe to pass under the walkway. Per C-03, the ground slopes down from the building at 5%.	A	The drawing is changed. The pipes directed to the drywell directly.	Closed						
5	RJM	C-05	Det 4	Invert of pipe must be the same as the ditch invert to prevent water from ponding in the ditch.	A	The drawing is changed. The pipes directed to the drywell directly.	Open: this comment refers to the pipe connecting the paved ditch, not the roof drains. Correct invert elevation.						
6	RJM	C-05	Drywell Section	Should be labelled Section A per Drywell Detail.	A	Provided accordingly.	Closed						
7	RJM	C-05	Drywell Section	Change "Bolder" to "Washed Stone", boulder is defined as >256mm and won't fit in 200mm space. Change 80mm dimension to 800mm on left side of section.	A	Applied accordingly.	Closed						
8	RJM	C-05	Paved Ditch detail	Change "Bolder" to "Stone", boulder is defined as >256mm and won't fit in 200mm layer and change Øback to 120mm.	A	Accordingly corrected. And applied.	Closed						
9	RJM	C-05	Ditch and Drywell Detail C	Correct spelling of Drywell in title. Change "Bolder" to "Stone", boulder is defined as >256mm and won't fit in 200mm layer and change Ø back to 120mm.	A	Revised Accordingly.	Closed						
10	RJM	C-06/C-07		The grades in the plan and profile do not match.	A	The profiles are corrected accordingly.	Closed						
11	RJM	C-06/C-07	Profile	The profile shows an angle point at 0+020, but is labelled as a constant slope.	A	Corrected.	Closed						
12	RJM	C-06/C-07	Profile	Downspouts are called out as 500mm above the bottom of the ditch, but the ditch is only 500mm deep. Correct inverts in conjunction with comment 4 above.	A	The drawing is changed. The pipes directed to the drywell directly.	Closed						
13	RJM	C-06/C-07	Profile	Downspout pipes and drywells are not shown to scale vertically.	A	The drawing is revised.	Closed						
14	RJM	CU-101		Provide a detail for the 50mm outdoor water connection, it appears to go into the drainage ditch.	A	The 50mm outdoor water line relocated to have not conflict with drainage ditch.	Open: provide a detail of the 50mm connection. Is it buried? Is it in a handhole? Does it project above ground and have protection from damage? This must be identified.						
15	RJM	CU-101		Provide lateral location for the water line and sewer line west of the building. It appears that these lines will conflict with the proposed drainage ditch and bollards.	A	waterline and sewer line adjusted to have not conflicts with drywell abd Bollards. Please refer to sheet CU-101.	Open: the paved ditches are not show in the correct location per the dimensions on sheet C-03. Per those dimensions, the west ditch will be in the dirt road and will conflict with the proposed sewer line and the east ditch will touch the wall of the mosque. Coordinate the location of the ditches with the provided dimensions and the other proposed utilities.						
16	RJM	CU-102	Plan	The proposed invert for the sewer pipe will not allow for the minimum cover required by Note 6. considering the 5% slope away from the building and the actual diameter of the pipe reduces the available cover to around 0.60m.	A	Sewer plan and profile revised to ensure all sewer pipes be covered at least 0.8m. Per revised sewer profile pipe invert at building out (B. OUT), per note 6. Please refer to sheet CU-102.	Open: based on the 5% slope away from the building and the contours provided, the finish grade of M-1 and CO-1 are incorrect and the pipe invert must be set lower.						
17	RJM	CU-102	Profile	The distance of manholes in the profile labelled as 80, 86 and 53 m are virtually the same distance. Redraw the profile to scale.	A	Sewer Profile revised to show correct distances. Please refer to sheet CU-102	Closed						
18	RJM	CU-102	Profile	The distance between M-2 and M-3 labelled as 80m on the profile scales as approx. 77m on the plan view.	A	The distance between all manholes between Plans and profile has been revised to show actual distances in the site plans. Please refer to sheet CU-102	Closed						
19	RJM	CU-501	Detail A	Note 1 calls for the well casing to extend at least 300mm above the slab, but the section calls out the extension as 200mm.	A	Detail revised to show 300mm extension for well casing per note 1.	Closed						
20	RJM	CU-501	Detail A	Correct the title to Section A, not Section B-B per Detail 2.	A	Title corrected to show section A-A	Closed						
21	RJM	CU-502	Det 4	How will this detail accommodate the pipe segments with only 0.8m cover? The pipe will be within the cone section.	AE	Per revised detail #4 and Fairfax County Public Utilities Manual (PFM), the cone height is variable. The provided detail, is a typical standard sewer manhole detail, for various height by adjusting the cone height or adding rings.	Closed						

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Response Legend
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Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check
		Page	Detail										
CIVIL COMMENTS													
22	RJM	Design Analysis		The analysis calculates the capacity of the channel, but this capacity is based on the channel being able to discharge the water downstream. Demonstrate that the drywells are able to infiltrate at a rate capable of removing the water as fast as it enters the ditch or that the total storage capacity of the system is sufficient to contain the entire storm.	A	Percolation test is attached to design analysis. Bases on the result of the test, the size and number of the dry wells are sufficient to discharge the storm water.	Open: provide calculations identifying the total volume of water and confirming that the drywells are adequately sized.						
100% Civil Design Comments													
1	NA	Specifications		Provide the following missing Specs sections in the civil portion as per UFGS : a. 33 11 00 Water distribution. b. 33 20 00 Water Well. c. 33 30 00 Sanitary Sewers. d. 33 40 00 Storm drainage utilities. e . 33 56 10 Factory fabricated fuel storage tanks. f. 03 31 29 Cast-in place concrete for civil work.									
2	NA	Specifications	General	Section -1.4: Government approval is required for submittals with a "G" designation. The contractor is required to add "G" designation for the appropriate items listed under section -1.4.									
3	NA	C-01a	Fuel Tank Pad	a. Provide fuel tank and piping details. provide fuel tank pad structure details and tank anchorage to the concrete pad.									
4	NA	Transformer Pad		Provide structure calculation for the Transformer Pad considering weight of the Transformer									
5	NA	Transformer		Provide anchorage detail of Transformer to the concrete pad									
6	WK	Page 32/114 2. Water supply system (2.1 Potable Water system)	2.1 Potable Water system	Per building manual and generally the average usage of water in Kabul is 135 liter per capita. Meantime the AUAF Women Dorms accommodate 200 female students plus support staff, while the calculation says Water Demand for dormitory= 200 Students x 120 liter/per student/day= 24,000 Liters/day									
7	WK	Page 32/114 2. Water supply system (2.1 Potable Water system)	2.1 Potable Water system	According to calculation the water demand for two other buildings= 2x24,000= 48,000 Lit/day, finally the total water demand will be 3x24,000=72,000 Liters/day. So how do you found that the two other building demand is same as Dorm building?									
8	WK	Page 39/114 (4.3 Quantity of Wastewater)	4.3 Quantity of Wastewater	According to calculation the quantity of wastewater will be approximately 80% of potable water usage, so based on which manual and code? According to the drawing (sheet P-105, 106 & 107) all the sewer water will goes to the existing sewerage tank (24000x80/100)=19200 Liters/day, so the existing sewer tank will have not the capacity to responsive accordingly									
9	RJM	Design Analysis		The geotechnical report is provided, but calculations regarding the total amount of water collected or the ability of the drywells to dissipate the water rapidly enough to avoid flooding of the site have not been provided.									
10	RJM	C-01a		Provide usable layout information on the layout plan. A dimension from the face of a Hesco barrier is not adequate for the layout of a building. The coordinate information provided on sheet C-02 or dimensions to project benchmarks would be better for location of the structure.									
11	RJM	C-02		Provide a detail for the grouted rip-rap from the roof drains to the paved ditch.									
12	RJM	C-02		Provide inverts for the drainage handholes and for the drain pipes entering the drywells. Confirm that the pipes will not conflict with the communication or electrical lines.									
13	RJM	C-04		The drainage handholes are shown as grates, but the detail has a solid concrete cover. Please coordinate.									
14	RJM	C-04	Scales	Provide a 1:150 bar scale for the plan view. The 1:10 bar scale does not match the details.									
15	RJM	C-05	Scales	The bar scales do not match the details.									
16	RJM	C-05a	Scales	The bar scales do not match the details.									
17	RJM	C-05a	Det C	Coordinate the detail with the plans. The invert at the drywells indicate a much greater invert than the 150mm shown in the detail.									
18	DCG	CU-102 and CU-502	9	Sewer inlet pipe on CU-102 Site Sanitary Sewer System profile shows pipe connecting to vent on holding tank but CU-502 shows elbow connection into holding tank top. Coordinate between both details.									
19	DCG	Specs		Specs are missing for Water Wells, Storm Drainage Utilities, Sanitary Sewers and Water Distribution									

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		Page	Detail								
ELECTRICAL COMMENTS											
65% Review Comments											
25	RNS	ED-08	Transformer pad	Contractors responsible to provide transformer pad drawings section, plan, dimension and pad mounted transformer details with all section views.	A	Please refer to sheet ED-10 all details regarding transformer pad is added	Open The transformer details, plans and elevations are not added in the site design development plans neither in the complete electrical package.	For information regarding dimension and shape of transformer refer to the ED-08. But other information about transformer will be submitted in its catalogue.	**Open** That sheet balance to Pat of transformer, not dimension of transformer, please prepare spread sheet for transformer and show the all dimension of transformer	Added , please refer to the drawing ED-08	**Open** Add a title for each section in these drawings and say which side did you show? (side view, in front view and top view), and arrange the drawings too.
65% Resubmittal Review Comments											
1	RNS	CS-E-02	Single line diagram	1. Show the details of (800 KVA transformer, 630A Circuit Breaker, 1600A Circuit Breaker, 80A Circuit Breaker) and specification for all of these. 2. Show the single line diagram of sprinkler system and provide schematics diagram for motors control system. 3. How you connected sprinkler system to the bushing of transformer? Please move it from there and connect it to the MDB. 4. Show the single line diagrams of surge arresters SDP and Well Pump SDP with specifications. 5. Add (pad mounted) in the transformer. 6. Please replace the line with continuous line and add the IP of MDB, MDP and spics. 7. Please Specify the location of exterior lights Panel. for more details see drawings		1. 800 KVA Transformer, 50 Hz, type of cooling: Onon, winding connection DYN-11, 630 A, four position load breaker, low voltage, breaker is MCCB 1600 A, 3pole. 2. Single line diagram and control system of sprinkler system will be provided by supplier of fire sprinkler system, along with fire sprinkler system submitted. 3. Applied. 4. Applied. 5. Applied. 6. Applied. 7. It will be next to MDB.	**Open** **1.** add these information to the Site design analysis also. **4.** Explain the single line diagram of surge arrester. **6.** Dash line of MDP & MDB didn't changed.	1. Applied. 4. Information about surge arrester added in design analysis, Grounding and Bonding. 6. Applied.	Open 4. Please clarify the Surge arrestor single line diagram, it doesn't make sense.		
3	RNS	CS-E-101	Electrical site plan	Hand hole of No.#8 is it existing?		It is new.	**Open** Change the symbol of Existing to the new symbol of Hand hole	Applied.	**Open** **It's not edited yet**		
99% Electrical Design Comments											
1	DJS	CS-E-102	Legend	Coordinate light fixture wattage and lamp type with Electric Pole Elevation and Schematic-Single 220V Luminaries Light Pole Wiring on drawing ED-11, correct the spelling of fluorescent.	A	Applied.	**Drawing CS-E-01 Legend, delete"(2x36)w" from outdoor metal halide light fixture legend. Drawing ED-11, detail 2, delete "150w, HPS"**				
2	DJS	CS-E-02		Correct spelling of Main Distribution **Board** and Surge Arrestor Single Line **Diagram**	A	Applied.	**Closed**				
3	DJS	ED-04		Correct spelling of **Lightning** in Typical Possible Grounding and Bonding Area detail.	A	Applied.	**Closed**				
4	DJS	ED-08		Correct spelling of **Transformer** Station # 3 Detail	A	Applied.	**Closed**				
5	DJS	DA		DA states the transformer is 630 kVA, change to 800 to conform to the drawings.	A	Applied.	**Closed**				
6	DJS	DA CS-E-02		DA states: "Kilowatt-hour meter will be provided and installed by Ministry of Power and Energy or DABM (Da Afghanistan Breshna Moassessa) only." There are no metering provisions shown on the single line diagram.	A	According to DABM metering is in the medium voltage system, that already installed in transformer station #2.	**Closed**				
7	DJS	DA	4.1 Lighting	States exterior lighting shall be HID (metal halide or high pressure sodium). Coordinate lamp type with drawings.	A	Applied.	**Closed**				
8	RJM	CS-E-102	Plan	Does the site lighting use H-11 and EM-10shown on CS-E-101? If so, label accordingly. If using a separate hand hole and manhole, label and check for conflict with proposed electrical and comm. structures.	A	Both are same.	**Closed**				
9	RJM	CS-E-102	Legend	Legend call for 50W fluorescent lighting. Details on ED-11 call for 60W or 50W high pressure sodium lighting. Coordinate all references with the design.	A	Edited.	**Closed**				
10	RJM	ED-04	Section A	Section should note 1m depth of conductor from building to match note on CU-101.	A	Edited, It is 80 cm.	**Open:** the note on sheets CU-101 & CS-E-101 still calls for 1m depth.				
11	RJM	ED-05	Grounding Installation Details	Revise Note 3 to reference depth of conductor of 1m noted on sheet CU-101.	A	Edited, It is 80 cm.	**Open:** the note on sheets CU-101 & CS-E-101 still calls for 1m depth.				
12	RJM	ED-08		Provide north arrow to assure correct orientation of concrete pad. Label manhole and hand hole consistent with sheet CS-E-101	A	Edited.	**Open:** the callout for the manhole and handhole are reversed per the plan information.				
13	RJM	ED-10		Provide north arrow to assure correct orientation of concrete pad.	A	Edited.	**Closed**				
14	RJM	ED-11	Pole Elevation	Call out the required length of the ground rod.	A	It is called out	**Closed**				
15	RNS	CS-E-02	single line diagram	**1.** Grounding conductor size of 70mm2 should be 35mm2 not 25mm2. **2**. Please add the schematic diagram for Well pump. **3.** What is SPD in the surge arrester single line diagram? **4.**Explain the single line diagram of surge arrestor it's Understandable. **5**. Does it require to have surge arrester in both panels?	A	1. Edited . 2. Added in CS-E-02. 3. Surge Protection Device. 4. Yes. 5. It is one surge arrester, Edited.	**OPEN** 1. Please don't replace 50mm ground conductor with 35mm, replace it with 25mm. 4. Please clarify the Surge arrestor single line diagram, it doesn't make sense.				

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		Page	Detail								
ELECTRICAL COMMENTS											
16	RNS	CS-E-102	Electrical Exterior Lighting plan	Please specify the single line diagram of exterior lighting, Show the connection load, where they feed.	A	Showed, it feed from MDB.	**OPEN** The exterior lighting Total load according to the drawing is 700W, but the single line diagram shows each circuit, 1=150VA, 2=100VA and 3=100VA, please clarify it				
17	RNS	CU-101	Site Utility plan	**1.** Please provide the details of crosses the Sewer line, MV/EL voltage line, Existed water line and Existed Electrical line . **2.** Please provide the details of crosses the Sewer line, COM and EL voltage line.	A	Details added, Refer to the drawing ED-09.	**OPEN** Add number of this page (CU-101) as a reference in the title drawing of page ED-09.				
18	RNS	CU-102	Site water & sanitary sewer systems plan	**1.** Please provide the details of crosses the Sewer line and Existing Electrical line. **2.** Please provide the details of crosses the Sewer line and Existing Electrical line.	A	Details added, Refer to the drawing ED-09.	**OPEN** Add number of this page (CU-102) as a reference in the title drawing of page ED-09.				
19	RNS	ED-11	Exterior light and Pole detail	**1.** Change the Title of this page, it's not Electrical Manhole details. **2.** Clear the lighting fixture light watts, is it 150W or 60W or 50W which one is correct.	A	1.Edited. 2.Edited.	**OPEN** **2.** It isn't edited yet (in the electrical pole elevation shows 100W, but in schematic SLD it shows 150W), Please correct it.				
20	RNS	CS-E-101	Electrical Site Plan	**1.** Please clear this grounding system, it's for hand hole or for MDB, we don't need this 4 ground rod for hand hole, it should be for MDB. **2.** Please consider a circuit breaker for the MV cable according to the standard codes and show its connection and specification in the SLD.	A	1. It's from MDB, just passed Hand hole. 2. Added, Refer to the drawing ED-10.	**OPEN** **2.** Please consider the SLD of MV cable connected to the Transformer #2, its not need to draw a separate SLD for connection of MV cable, just showed in the SLD of page #CS-E-02 and in the site utility plan page #CU-101, (show, how you connect MV cable from existing tower #2, show the disconnect switch with details) it should be shown in the site utility plan and in the SLD.				
21	RNS	ED-05	Electrical Grounding Rod system Details	**1.** According sheet No ED-08, the pad of Transformer is 4000mm but in this page its 20000mm, explain the dimension. **2**. Add in the details of this sheet (Transformer Grounding Rods system plan)	A	1. Applied. 2. Added.	**OPEN** **2.** Please change the title of this page from (Grounding rod system) to Transformer Grounding System.				
22	RNS	ED-03	Electrical & Communication Pit details	Please show the references, which section is this.	A	The referenced detail is revised.	**OPEN** The details you provided in drawing ED-03 doesn't shows which section are they belong, please specify the related section.				
23	RNS		Partial site design analysis.	Add the MV cable calculation to the partial site design analysis.	A	Added in Design Analysis	**Closed**				
100% Electrical Design Comments											
1	RNS	ED-08	Transformer station #3 detail	Add a title for each section in these drawings and say which side did you show? (side view, in front view and top view), and arrange the drawings too.							
2	RNS	ED-04	Electrical grounding detail	**1.** Please change the title (Electrical Grounding Detail) to MDP Grounding System and details. **2.** In this page in the left hand drawing (Exothermically Welded Cable to ground rod) is not acceptable. because detail A is not match to the ground rod system plan, and Exothermal welded #1, #2 and #3 are not used here, please provide that detail are used, provide this type welded (T type two ways with angle Exothermal Welded and X type or three ways Exothermal Welded).							
3	RNS		General	Please provide a separate sheet for grounding system, and show all the grounding on that sheet.							
4	RNS	ED-09	Trenches and section detail	Please add title for each trenches section details in this page.							
5	RNS	CS-E-02	Electrical single line diagram	Please arrange the SLD.							
6	RNS	ED-05	Electrical Grounding Rod System Details	In this page in the left hand drawing (Exothermically Welded Cable to ground rod) is not acceptable. because detail A is not match to the ground rod system plan, and Exothermal welded #1 and #3 are not used here, please provide that details are used, provide this type welded (T type two ways with angle Exothermal Welded and X type or three way Exothermal Welded).							
7	RJM	ED-01/ED-02	Details 6 & 7	The details are labelled as Section A-A, correct titles.							
8	RJM	ED-01/ED-03	General	Increase the size of some dimension text for readability and to conform with the rest of the sheet.							
9	RJM	ED-08		The plan view of the transformer shown on the pad does not match the size or shape of the transformer shown to the left.							
10	DJS	CS-E-02	Single Line Diagram	Fix graphics of the future spares in the MDP							
11	DJS	CS-E-02	Surge Arrestor Single Line Diagram	Correct spelling of **Lightning** Current							
12	DJS	CS-E-02	Legend	The M.S should be a magnetic switch, not a manual switch.							

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A - Agree
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AE - Agree with exception

Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check
		Page	Detail				
100% Review Comments							
COMMUNICATION COMMENTS							

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100% Review Comments							
FIRE PROTECTION COMMENTS							

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		Page	Detail					
MECHANICAL COMMENTS								
No Comments related to civil site development in mechanical								
100% Review Comments								

Response Legend
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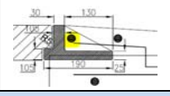
D - Disagree
O - out of scope
AE - Agree with exception

Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check
		Page	Detail								
PLUMBING COMMENTS											
65% Review Comments											
44	MA	CU-502		Show chlorine dosing assembly equipment parts as chlorine mixing tank and dosing pump	A	Chlorine dosing assembly equipment parts shown as chlorine mixing tank and dosing pump. Refer to sheet CU-501.	OPEN (it was not found in the civil site development partial design submittal)	Manufacturer catalog and product data has been provided in Utility Design analysis for chlorine dosing assembly equipment parts as chlorine mixing tank and dosing pump.	Open. We could not find the Chlorine dosing in the design analysis.	Manufacturer catalog and product data has been provided in Utility Design analysis for chlorine dosing assembly equipment parts as chlorine mixing tank and dosing pump.	Open (the catalogue was found in the Utility Design Analysis but the capacity for the dosing tank and pump is not available in the drawings and no calculation is done for chlorine system in the Design Analysis

Response Legend
A - Agree
D - Disagree
O - out of scope
AE - Agree with exception

Comment #	Reviewer	Reference		Review Comment	Perez Response Legend	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back-Check	Perez Response	Back- Check
		Page	Detail										
STRUCTURAL COMMENTS													
76	APL	ED-01, ED-02	Section A, Detail A	There is a conflict between the reinforcement at the cover and the cover bracket.	A	Adjusted accordingly.	Open. Not updated.	Adjusted Accordingly Please refer to sheet ED-01 and ED-02 Detail-4	This highlighted bar is still in conflict on ED-01 and ED-02. 	The bar is omitted.	This highlighted bar has been deleted from ED-01 but is still in conflict on ED-02.	ED-02 Is Adjusted Accordingly	Closed
65% Resubmittal Review Comments													
1	APL	C-02		Add bollards around the water well since it is not designed for vehicular loading.	A	Comply with bollards are added please refer to C-02.	Open. Bollard have been provided but it appears the spacing between them does not restrict vehicular access.	The number of bollards increased.	Closed				
2	APL	Water Well Calculations		Design of the underground structure should be updated with concrete cover in accordance with ACI 318 - concrete cast against earth shall be 3" min cover, concrete exposed to earth shall be 1.5" cover.	A	Adjusted accordingly.	Open. Design calculations and drawings do not reflect cover noted.	Design Analysis and calculation adjusted accordingly.	Closed				
3	APL	Water Well Calculations		Design calculations should be provided for the top and bottom slab and wall calculations should take into account the design of rectangular tank horizontal rebar for forces.	A	Calculation is provided for the slab, it is a vault not a tank. Please refer to Utility Design Analysis section 5. Structural Water Well Vault Analysis and Calculations.	Open. Is the intent that the vault be designed for seismic?	Since its and underground structure and there is no movement due to above ground height and a zero base shear so no need for considering seismic.	Open: the tank walls will see an increase in lateral earth pressure during a seismic event. If the water supply to the dormitory is critical following a seismic event, then the contractor must confirm the reinforcement meets strength and cracking requirements as required by Code."				